

OXC-3052

Copy 2038

February 9, 1962

Dear Bob:

Ref:  Building Equipment

We have been finalizing our equipment needs for testing at  and are now able to give a much more complete summary of requirements. Your messages to Headquarters relative to the shop are greatly appreciated and have served to clear up one point of disagreement.

Shop Equipment: Following the basic rule that only high precision, light machining will be required, the following equipment and alternates are recommended. It is our opinion that the Bridgeport Mill is the most versatile choice; it will do all jobs that the bench mill can do. The bench mill, however, will not do many jobs which can be performed on the Bridgeport. The Di-Acro precision shears and finger brake are relatively inexpensive and not really luxuries. We may have considerable light sheet metal panel alteration in the thermal shielding area. I would like to point out that the shears and brake are of secondary priority and we could get along with hand shears and block bending if the units are not available. A larger shear or brake than specified would not be economical from procurement, use or space considerations.

Item 1 - Lathe

Hardinge DV59 Precision Speed Lathe,  
5 x 4 1/2 cross-slide, 36" bed, 220 V,  
60 cycle, 3 phase.

Universal jaw chuck for Hardinge DV59 Lathe.

Headstock male center.

Driving dog.

Drill chuck (0-3/8").

Tailstock male center.

1 Set round 5C Hardinge collets - 1/8"  
through 1 1/16" x 1/32" increments.

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Item 2 - Mill

1st Choice

Bridgeport Milling Machine, Model "J", 220 V AC, 60 cycle, 3 ph, 9 x 32 table, R-8 spindle taper.

1 set collets 1/8" through 3/4" x 1/16 increments, R-8 taper.

#1 Bridgeport 5" swivel vise.

#5 Bridgeport right angle attachment.

#2 Bridgeport offset boring head and 1 set of Bridgeport boring tools.

Cross travel stop.

#1, #2, #3 shell mill holders, R-8 shank.

#14 Jacobs precision drill chuck adapted to R-8 taper.

2nd Choice

Elgin Precision Vertical Bench Milling Machine, 4 1/8 x 18 table, No. 2AB collet size, 220V. AC, 60 cycle, 3 ph.

1 Elgin 4" swivel vise.

1 Elgin swivel base.

1 set collets 1/8" through 9/16" x 1/16 increments, adapted to 2AB collet.

1 set Elgin boring bits.

#14 Jacobs precision drill chuck adapted to 2AB collet.

Item 3 - Bench Grinder

Delta 7" Standard Bench Grinder, 1/2 hp, 110/220, 60 cps, 1725 rpm, 5/8" arbor.

1 al. oxide wheel, 5/8 x 7, 46G, Grade N, 5/8" hole.

1 al. oxide wheel, 1 x 7, 60G, Grade N, 5/8" hole.

Item 4 - Surface Plate

Bryant 24 x 36, granite surface plate or equiv. Stand, certified type, 3 point support.

Item 5 - Brake

Di-Acro Box Finger Brake No. 24, 24 inch capacity, up to 16 gage mild sheet steel.

Item 6 - Shears

Di-Acro Precision Shears No. 4, 24 inch capacity, up to 16 gage mild sheet steel

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**Item 7 - Drill Press**

High Speed Hammer Co., Model R-33 Drilling Machine, 1/4" Jacobs chuck, 1/4 hp, 110/220 V AC, 60 cps, 6" x 5" table.

**Item 8 - Air Compressor 4940-221-2446**

Spray Outfit as referenced JWH Memo for Record is completely satisfactory.

**Item 9 - "Jobe" Blocks**

In reviewing field requirements, we recommend that procurement of a set of "Jobe" blocks be deferred at this time.

**Item 10 - Vacuum Cleaners 7910-254-4956**

One vacuum cleaner and one combination Scrubbing-Waxing machine are now in the [ ] Bldg. It is requested that one additional vacuum cleaner, Vert. Tank Type be supplied.

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**Test Equipment**

**Item 11 - Sanborn Recorders:** Information coordinated with DM shows the following parts necessary to bring two of the three units now at the [ ] Bldg. up to operating capability (Memo stated 4 assigned to account presumably includes one at DM).

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A. (6)-#150-2150 Plug in amplifiers	\$75.00 ea.
B. (2) #10A26-2FW Connector for Recorder	6.55 ea.
C. (2) #10A26-2FWA " " "	1.10 ea.
D. (2) #10A26-FWA Connector for Amplifier Chassis	1.10 ea.
E. (2) #10A26-FWB Connector for Amplifier Chassis	2.05 ea.
F. (2) #10A26-1MW Connector for Amplifier Chassis	3.95 ea.
G. (2) #10A6-2FW Input Connector	2.05 ea.
H. (2) #10A26-FWA Input Connector	1.10 ea.
I. (2) #158-600- C5Pl Paper Take-up Spindle	10.50 ea.

Purchase from Sanborn Company  
Waltham, Massachusetts

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**Item 12 - Power Cart**

It is my understanding that Dick P. of DM reserved a power cart for our use at   
This should be shipped at your earliest convenience.

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**Item 13 - Variable Frequency Power Supply**

Metrolog 503-1A or equivalent.

Specifications: 0-130 volt AC  
300-800 cps, 1 phase, 250 VA.

**Item 14 - Regulated Power Supply**

Lambda Electronics Corp. Model LT-2095M  
or equivalent.

Specifications: 0-32 volt DC, 0-2 amp.  
0.15% load regulation  
RMS ripple less than 1 mv.

**Item 15 - Regulated Power Supply**

Lambda Electronics Corp. Model LA-200-03AM  
or equivalent.

Specifications: 0-34 volt DC, 0-20 amp.  
0.10% load regulation  
RMS ripple less than 1 mv.

**Item 16 - Tektronix Oscilloscope**

Model numbers in order of preference.

1. Model 545
2. Model 535
3. Model 532

**Item 17 - Tektronix Plugin Unit CA - Dual Trace.**

**Item 18 - Tektronix Plugin unit D - High Gain DC.**

**Item 19 - Tektronix Plugin unit L - Extra Gain and pass band.**

**Item 20 - Tektronix Scope Cart for Item 18.**

**Item 21 - Tektronix Scope probes - 2 each x 10.**

**Item 22 - Tektronix Scope probes - 2 each x 1.**

**Item 23 - Tektronix Current Probe P6016.**

- Item 24 - D.C. Digital Voltmeter and Display - 1 mv. Resolution  
Kintel, Division of Cohn Electronic Inc.  
Model 401 D.C. Digital Voltmeter or equivalent.
- Item 25 - Beckman Universal EPUT Model 7370  
with A/B or frequency Start and Stop feature.
- Item 26 - Pulser  
General Radio Company  
Type 1217 Unit Pulser  
Type 1201-B Regulated Power Supply.
- Item 27 - Multimeter  
Phaostron Model 55A or equivalent.
- Item 28 - General Purpose Multimeter  
Simpson Model 262 or equivalent.
- Item 29 - Decade Resistors (2 each)  
Model RDB 100 to 11,000 ohms  
Model RDC 10,000 to 1,000,000 ohms  
or equivalent.  
Cornell Dubilier
- Item 30 - Decade Capacitors (2 each)  
Cornell Dubilier  
Model CDC-5 0-10 mfd.  
Model CDB-5 0.1-1.0 mfd  
or equivalent.
- Item 31 - Variac  
General Radio Model W5M or equivalent.

Stereoscope - Microscopes - Magnifiers

- Item 32 - (3 req'd) Index No. 24-1300 Fed. Stock 6650-515-6002  
20X magnifier.
- Item 33 - Microscope  
(1) First choice - Index No. 26-1300, Stock  
No. 6650-530-0021.  
(1) Second choice - Index No. 26-1200, Stock  
No. 6650-530-4276.

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Item 34 - Microscope 2 Req'd (or one each)

(2) First Choice - Index No. 26-700, Stock No. 6650-556-8549.

(2) Second Choice - Index No. 25-9965, Stock No. 6650-431-5000.

Laboratory Equipment

Item 35 - Psychrometer

According to our information the unit listed below does not contain mercury.

Will Corporation Cat. No. 16872 (approx. \$16.00) and Will Corporation Cat. No. 16919 (extra wicks 1 doz., \$1.50).

(If Depot is unable to obtain, we will obtain upon request).

Processor - Larry B. has indicated requirements for the processing of 16 and 35mm black and white film. Due to the uncertainty of delivery of the modified SP120 unit covered in ELG correspondence, it is requested that Depot supply to  for temporary installation, one of the two units listed below.

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Item 36 - Processor, one only of available machine.

A. (Preferred) Type A-8A Processing Machine, Spec. Nr. Mil-P-4029A, Index No. 7570, Stock Nr. 6740-663-3833, 3500 pounds, 102 x 36 x 82 inches, 15 KW max. power.

B. Type A-11 Processing Machine, Spec. Nr. Mil-P-4082B, Index No. 7565, Stock Nr. 6740-224-9742, 1600 pounds, 80 x 36 x 72 inches, 3,850 max. power.

It is probable that other requirements will arise (such as the foot cleaner or disposable shoe suggestion) of which we will keep you informed.

The electronic test gear requirements are of the minimum nature. They do not include the units already at

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[ ] which we have previously discussed. Having a general feel for our needs and knowledge of what instruments are in your storage might lead to additional suggestions on your part. It is certainly an advantage to have the instruments where they might be used and kept in a good state of repair and calibration rather than where they are not being used at all. For instance, an extra scope or one or two extra VT voltmeters would be an asset.

I hope the above items will bring us nearly to the operational readiness stage. As previously discussed, all electronic gear with the exception of the test cart should be sent to our facilities. We will return this gear through your depot for shipment to [ ]. The enclosed electrical specification brochures might help identify some of the items described.

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B. L. E.

BLE:LB

Enc.

cc: E.L.G. - W.R.E.

C.F.H.

J.P.